NAVSEA
STANDARD ITEM

FY-12

ITEM NO: 009-14
DATE: ***30 JUL 2010***
CATEGORY: II

1. SCOPE:

1.1 Title: Gages and Thermometers; repair and certify calibration

2. REFERENCES:

2.1 Calibration Requirements List (CRL) for Shipboard Installed Instrumentation

2.2 NAVSEA OD 45845, Metrology Requirements List

2.3 ISO 17025, General Requirements for the Competence of Testing and Calibration Laboratories, First Edition

2.4 ANSI/NCSL Z540-3, Requirements for the Calibration of Measuring and Test Equipment

2.5 NAVSEA 04-04734, Naval and Marine Corps Calibration Laboratory Audit/Certification Manual

2.6 NAVAIR 17-35TR-8, Technical Requirements for Calibration Labels and Tags

3. REQUIREMENTS:

3.1 ***Prior to the installation of gages and thermometers, verify applicable NAVSEA documentation to determine if the instrument requires calibration. Permanently installed gages and thermometers are addressed by 2.1; all other meters are addressed by 2.2.***

3.1.1 If required to be calibrated, the instrument shall have at least two-thirds of its calibration life remaining. If it does not, calibrate the instrument in accordance with 3.7.

3.1.2 If the instrument is designated No Calibration Required (NCR), perform a functional check to ensure proper functioning of the instrument.

3.1.3 System or chain calibrations (designated as Level 2 in the ship's CRL) are not be performed by commercial activities. For system calibration, contact the SISCAL Engineering Agent (NSWCCD-SSES Code 953) at 215-897-1234.

3.2 Disconnect and remove each gage and thermometer.

3.2.1 Remove sealed gages as a complete unit.

3.3 Clear gage lines from instrument side of root connection of obstructions by blowing clean, dry air through the lines.

3.4 Disassemble and clean equipment to remove loose paint and foreign matter.

3.4.1 Do not disassemble sealed gage unit.

3.5 Repair the gages and thermometers to manufacturer's specifications.

3.5.1 Remove existing and install new components in place of those found to be missing or defective.

3.5.2 Free-up and adjust moving parts.

3.5.3 Restore unit cases to original finish.

3.6 Assemble equipment.

3.7 Calibrate and adjust each gage and thermometer, including associated accessories, to the manufacturer's specifications, using appropriate calibration procedures and test equipment in accordance with ***2.1 for permanently installed meters, or 2.2 for portable/non-installed meters***.

3.7.1 Calibration laboratories shall be accredited to either 2.***3*** or 2.***4*** by a Commercial Accreditation Activity, or certified by a Navy Certification Activity to 2.***5,*** and the scope of accreditation must cover the appropriate measurement parameters and ranges of the calibrations performed.

3.7.2 In the absence of manufacturer's specifications, tolerances shall be in accordance with Section 1 of 2.***2***.

3.7.3 Affix a calibration label to the face of each meter, denoting the name and location of the calibration facility, the NAVSEA Lab Code if assigned, the date of calibration, and date of next calibration. Department of the Navy standards, calibration activities, and TAMS custodians shall use calibration labels and tags in accordance with 2.***6***.

3.7.4 The calibration interval assigned for shipboard installed instrumentation shall be in accordance with 2.***1***. All other instrumentation shall have a calibration interval assigned in accordance with 2.***2***.

3.7.5 Submit one legible copy, in hard copy and electronic media (in Excel format), of a calibration events data file in accordance with Attachment A for each contractor and subcontractor-performed calibration event to the ship's Field Calibration Activity (FCA), Engineering/Maintenance Officer and AIMD Officer (if assigned) via the SUPERVISOR on a bi-weekly basis. The

cognizant shipboard representative shall enter the calibration data into the Navy's calibration recall system.

3.8 Install and connect each unit. Install new seals, gaskets, and fasteners.

3.8.1 Fasteners shall conform to ASTM A 449, Type I, zinc coated for bolts; ASTM A 563, zinc coated for nuts; or selected and identified in accordance with SAEJ 2280.

3.8.1.1 Fasteners requiring a permeability factor of 2.0 or less shall conform to Grade 304 CRES.

3.9 Ensure correct indication of each gage and thermometer during operational test of equipment.

4. NOTES:

4.1 The SUPERVISOR will supply the contractor with a copy of the CRL provided by the Ship's Chief Engineer.

4.2 The SUPERVISOR will provide a copy of the calibration data to the Ship's Force Calibration Coordinator for the purpose of updating the ship's RECALL list.

4.3 Contact NAVSEA 04RM3 for information on commercial accreditation in accordance with 2.***3*** and 2.***4*** by NAVSEA approved commercial Accrediting Bodies (AB).

4.4 Contact one of the following Navy Certification Activities for certification requirements in accordance with 2.***5***:

Norfolk Ship Support Activity
Laboratory Certification Branch
(Code 222)
Phone: (757)443-3872 Ext 2553
FAX: (757)443-3666

Southwest Regional Maintenance Center
Laboratory Certification Branch
(Code ***240C***)
Phone: (619)556-***6699***/(619)***556-1346***
FAX: (619)556-***4877***

4.5 This item does not apply to Oxygen gages.

ATTACHMENT A

- ***Entries in the calibration events file shall not be abbreviated.***

- ***The event data for NOFORN/Reactor/steam plant instruments will be handled in accordance with the applicable SEA 08 directives.***

- ***For existing, permanently installed instruments, the calibration events file data set shall include the nomenclature, CRL reference number, condition received (i.e., In Tolerance (IT) or Out of Tolerance (OOT)), date calibrated, date due, procedure used, calibration standard used, servicing lab code and service label applied (i.e., calibrated, special calibration, rejected, etc.) in accordance with 2.6.***

- ***For existing, non-installed instruments, the calibration events file data set shall include the nomenclature, National Stock Number, SCAT Code, instrument serial number, manufacturer CAGE, procedure used, calibration standard used, sub-custodian and work center.***

- ***For newly added instruments, the minimum data set includes manufacturer, model, serial number, nomenclature, manufacturer's CAGE, range, red hand settings (if applicable), procedure used, cal standard used, date calibrated, date due, servicing lab code, service label attached, location, part-of (System), function within the system (if permanently installed), National Stock Number and SCAT Code.***